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Janet Campbell, Editor

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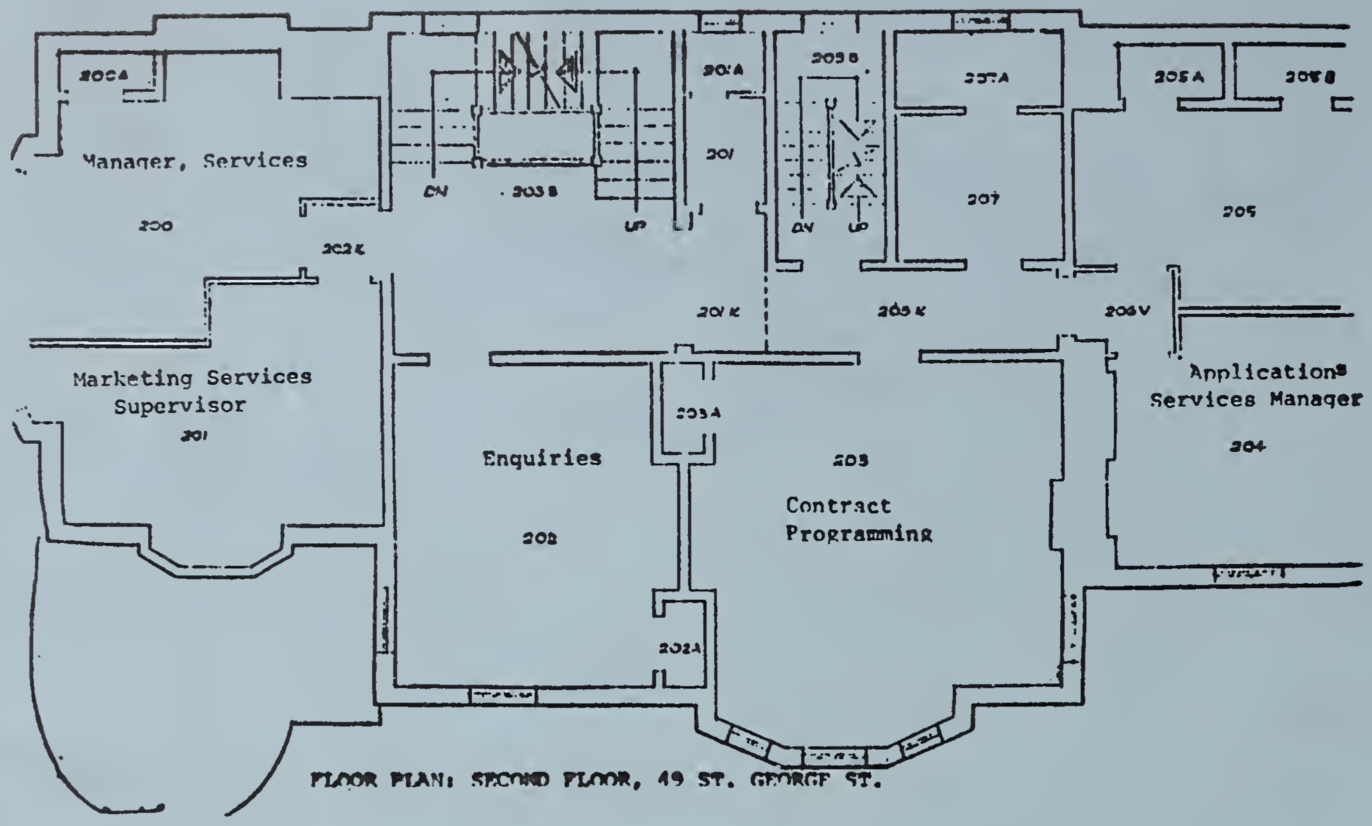

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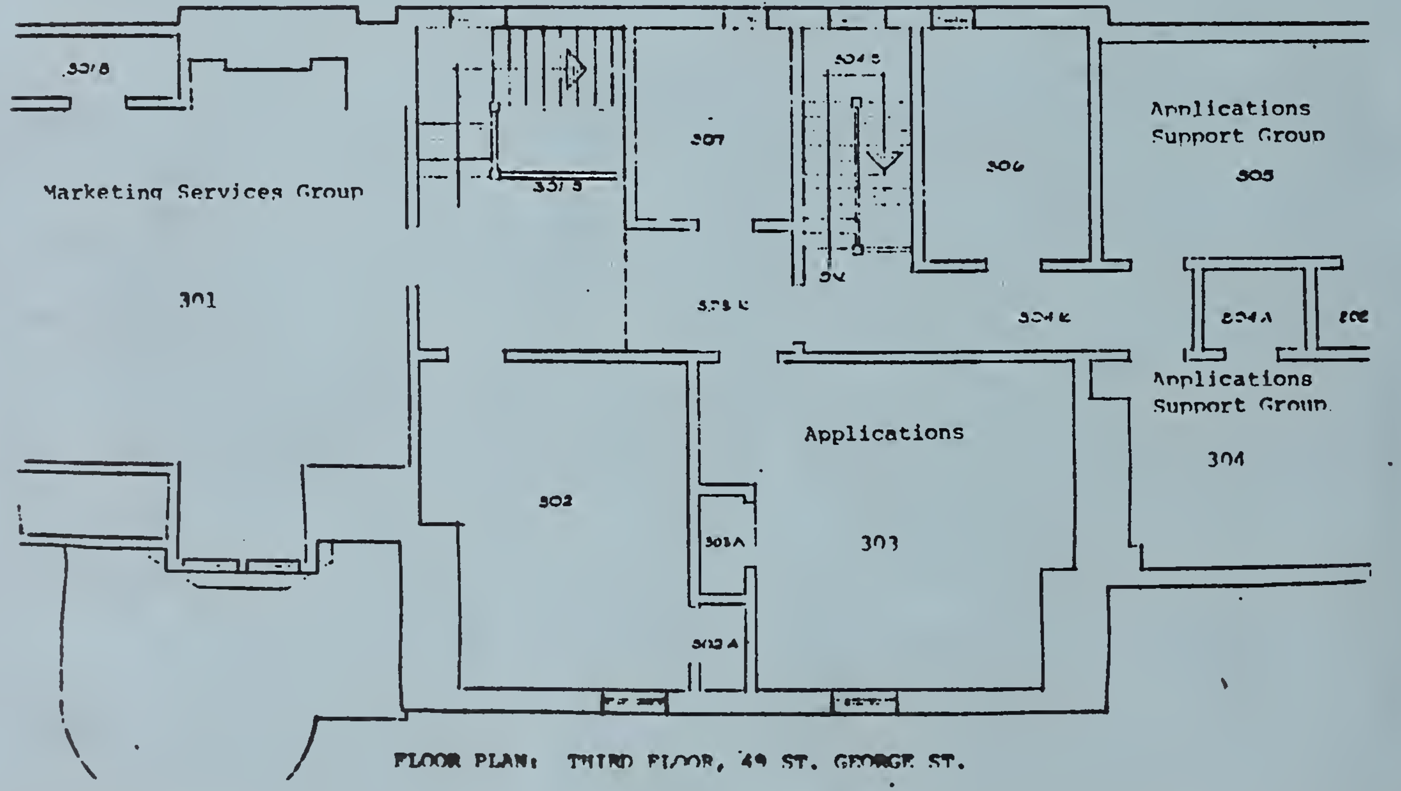

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COMPUTERNEWS is a monthly publication produced by the University of Toronto Computer Centre. Enquiries or contributions should be directed to the Editor, Janet Campbell or the Assistant Editors, Margo Harvie and Ruth Borenstein in the Sandford Fleming Building room SF125 or (416)-928-2066. Layout and ATS typing are provided by Lynne Jenkins. Subscription changes should be directed to the Information Office, Sandford Fleming Building room SF128 or (416)-928-4990.

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UTCC MEMO CALENDAR

This month a new feature makes its debut in COMPUTERNEWS. Each month UTCC will publish a tear out memo calendar for the following month. A different UTCC service or facility will be featured each month with photographs and a companion article. Any UTCC activities of interest to users will be advertised under the appropriate date.

The January 1976 calendar in this issue of COMPUTERNEWS features the self-service input/output facilities at the Sandford Fleming Terminal. Photos are by Mark Tapia and the artwork was provided by Adam Love.

Users who wish to advertise seminars, conferences, computer presentations, etc. on the calendar are invited to contact any member of the Publications Group in SF125, phone 928-2066. Note that the deadline for submitting notices to appear on the calendar is the 15th of the previous month, e.g. copy for the February 1976 calendar must be submitted no later than January 15, 1976.

Janet Campbell

THE SANDFORD FLEMING TERMINAL

Photographs of the self-service card reader and line printer in the Sandford Fleming Terminal appear on the January 1976 calendar in this issue of COMPUTERNEWS. The SFT terminal is located in room SF112, Sandford Fleming Building, 10 King's College Road. Equipment at SFT currently consists of three 1403 line printers (two self-service), two self-service 2501 card readers (one with OMR feature), one 2540 reader/punch, two express keypunches, a self-service GOULD 5000 plotter and a job blacklog display console. The SFT terminal supports all special forms available on the S/370-165-II and users often route special setup jobs to the SFT terminal for printing. Output is filed by UTCC computer operators and is retrieved on a self-service basis.

Hours of service at SFT are:

8 a.m. - 10 p.m. and
midnight - 3 a.m. Monday to Friday
3 a.m. - 6 a.m.*

10 a.m. - 6 p.m. Saturday and Sunday

* Hours between 3 a.m. and 6 p.m. are subject to change as determined by the necessity for system tests. Notices will be posted by 5 p.m. of the previous day if service will be available at this time.

The Computer Co-ordinator for SFT is Mark Tapia. He may be contacted in room SF125 or phone 928-7109.

IBM 5100 PORTABLE COMPUTER ARRIVES

In cooperation with the Computer Systems Research Group, UTCC has arranged to purchase an IBM 5100 desk top computer. The 5100 is a product of the IBM General Systems Division and a prototype was on display at the UTCC Open House where it generated considerable interest.

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IBM 5100 PORTABLE Cont'd.

As a result of this interest, UTCC and CSRG have entered into an agreement to purchase a model C4 5100 which includes read only storage for APL and Basic with 64 K of read/write storage for user programs. The optional 5103 printer, 5106 auxiliary tape unit, and slow speed communications interface have also been purchased.

Under the agreement with CSRG about 45% of the resources represented by the 5100 will be available to UTCC for sale to other interested parties. UTCC feels that this is an excellent opportunity for its users to explore the potential uses of this new device without the purchase commitment required by IBM.

UTCC is particularly interested in contacting users who could use the 5100 in a data acquisition or control environment. IBM has recently announced an EIA RS-232-C interface for the 5100 which will allow it to connect with a variety of other manufacturers' equipment including data gathering and test gear.

Interested parties should contact UTCC Marketing Services at 928-6877 for more information and to discuss possible applications.

Al Heyworth

MAGNETIC TAPE PRIMER

This article is intended to provide some basic information on magnetic tapes to users who are unfamiliar with magnetic tape usage.

A collection of data (dataset) on a magnetic tape is called a file. There may be more than one file on a single magnetic tape. Data written and read by the IBM 360 machines are on magnetic tapes of 9-track format, i.e. 8 parallel bits of information and a parity bit (roughly, an optional checking bit). Data processed by the IBM 7094 are on magnetic tapes of 7-track format, i.e. 6 bits of information and an optional checking or parity bit. Magnetic tapes used in the IBM 370 machines may be 7 or 9 track.

Magnetic tape information is stored on the tape in bits-per-inch (BPI). The S/370-165-II allows for tape densities of 800, 1600 or 6250 bits-per-inch, the 7094 allows for only 556 BPI or 800 BPI tape densities, and the 360 allows only 800 BPI.

If the first data record on the first data file on a S/370-165-II magnetic tape contains the characters VOL, the IBM Operating System (OS) assumes this tape to be a standard labelled tape. It also assumes that the remainder of the first file contains information pertaining to the first dataset on the tape. Not all tapes that are processed by the 360 and 370 Operating Systems need be labelled. However, it is recommended that the user label his tapes in order to assure that his data is protected.

IBM has several utilities to print magnetic tape files. Generally, their capabilities are rigid; only one dataset or file can be processed at a time. UTCC, however, has a complete series of tape handling utilities that can process more than one file at a time, as well as a series of tools to determine the characteristics of unknown tapes.

cont'd...

MAGNETIC TAPE PRIMER Cont'd.

Users who have any questions regarding this article or on magnetic tapes in general, may contact Herb Kugel at 928-7286.

Herb Kugel

PERSONNEL CHANGES

Leaving the Computer Centre this month are Carol Lang and Dave Hart. Carol has transferred to the Zoology Department. Dave has moved to Ottawa. Good luck in your new endeavours.

Joining the Centre are Helen Peacock, Raymond Shen and John Sutherland. Helen joins the Marketing Services group as a Marketing Representative, Raymond replaces Ralph Lombardi as Computing Co-ordinator at Scarborough College and John is a new programmer in the Systems area. Welcome aboard !

Trudy Holland

RECENT ACQUISITIONS IN THE DEPARTMENT OF COMPUTER SCIENCE LIBRARY

ACM SIGARCH-SIGOPS Workshop on Virtual Computer Systems,
Harvard University, 1973.
Workshop on Virtual Computer Systems.
New York, ACM, 1973.

Aron, Joel D.
The Program Development Process, Part 1: The Individual Programmer.
Reading, Mass., Addison-Wesley, 1974.

Brooks, Frederick Phillips, Jr.
The Mythical Man-Month: Essays on Software Engineering.
Reading, Mass., Addison-Wesley, 1975.

International Symposium on Stiff Differential Systems, Wildbad im Schwarzwald, 1973.
Stiff Differential Systems, ed. by R.A. Willoughby.
New York, Plenum Press, 1974.

Remote Job Entry

A UTCC-DEVELOPED RJE FACILITY HAS BEEN ADDED TO OUR LIST OF SERVICES.

- EASIER TO LEARN AND USE.
- FAST AND CONVENIENT.
- LESS COSTLY THAN OTHER RJE FACILITIES.

YOU CAN DO YOUR BATCH COMPUTING MORE CONVENIENTLY THROUGH RJE.

FOR A DEMONSTRATION CALL YOUR MARKETING SERVICES REPRESENTATIVE OR 928-6877

SSP ROUTINES

The Scientific Subroutine Package of routines has been classified by IBM as Class 3 software for some time now. Recently, IBM announced that documentation for SSP routines would no longer be available from them. Fortunately, more up-to-date replacement routines are available from IMSL (International Mathematics and Statistics Libraries of programs) and other software distributors. Users are advised to make use of these routines. However, for users who still want to use SSP routines, source copies are available in various application libraries. Documentation for these routines can be obtained by zeroxing the required pages from a terminal-supplied copy or a reference library copy.

Len Prepas

SPEAKEASY SESSIONS

LAMBDA Testing

UTCC has obtained a revision of the LAMBDA version of the SPEAKEASY processor. This revised version is reasonably stable and users may wish to use it to test the features of LAMBDA. The primary improvements in LAMBDA include a completely new program EDITor, improved KEEP/KEPT facilities (including KEEPLIST which provides data structures, a major advance in the language capabilities), nearly complete text processing capabilities and revamped statistical routines.

LAMBDA is accessed by coding LEVEL=LAMBD in batch or LEVEL(LAMBD) in TSO. (Note that the spelling is LAMBD, not LAMBDA). The SPEKHELP procedure, for batch printing of the HELP file, and the SR command, also accept the LEVEL parameter. The default for all of these is currently KAPPA but will be LAMBDA when the final version of LAMBDA is available (early in 1976).

The SIZE parameter on the EXEC SPEAKEZ statement or the SPEAKEZ command now accepts 090, 150, 180 and 240. There is no 180 version in LAMBDA and requesting this size will result in the next smallest version (150) being accessed in order to prevent out-of-core failures. The 240 version has almost no overlays but will not run in a 250K REGION or LOGON, because at least 10K is required by OS/360. Thus, the 090 or the 150/180 version should be used unless a REGION or LOGON of around 270K is available (class B in batch with a SETUP statement for REGION; after midnight or on weekends for TSO).

Not that programs and sessions saved under LAMBDA cannot be used under KAPPA. Users should avoid saving programs or sessions under LAMBDA which will be needed in KAPPA. However, programs and sessions saved under earlier versions should work under LAMBDA.

For a list of changes with LAMBDA, enter HELP NEWS under LAMBDA. For a list of problems, known but not yet solved, enter HELP BUGS under either KAPPA or LAMBDA. The list will correspond to the version in use. For a list of all keywords, enter VOCABULARY under either version. The resulting list will correspond to the version in use.

cont'd...

SPEAKEASY SESSIONS Cont'd.

Users having problems, comments and/or suggestions concerning LAMBDA should contact Ian Darwin at 928-7318.

Database Management

The KEEPLIST/KEPTLIST facilities mentioned above, provide the basis of database management. For example, a LIST (which is a name vector) could be defined to include NAME, ADDRESS, CITY and CODE to provide a simple but effective mailing list facility. New operators are provided for manual entry of each item. Documentation on this facility should be available with LAMBDA's full release. Under TSO, this facility currently uses partitioned dataset (PDS) file structures which are slower and more expensive than other file structures but UTCC looks forward to the use of a faster file mechanism in the future.

Users interested in KEEPLIST/KEPTLIST, should contact Ian Darwin at 928-7318.

Ian Darwin

HSJS MONTHLY STATISTICS

During the month of November, 1975, 197,726 jobs were processed compared with 232,380 for the previous year, a decrease of 15%.

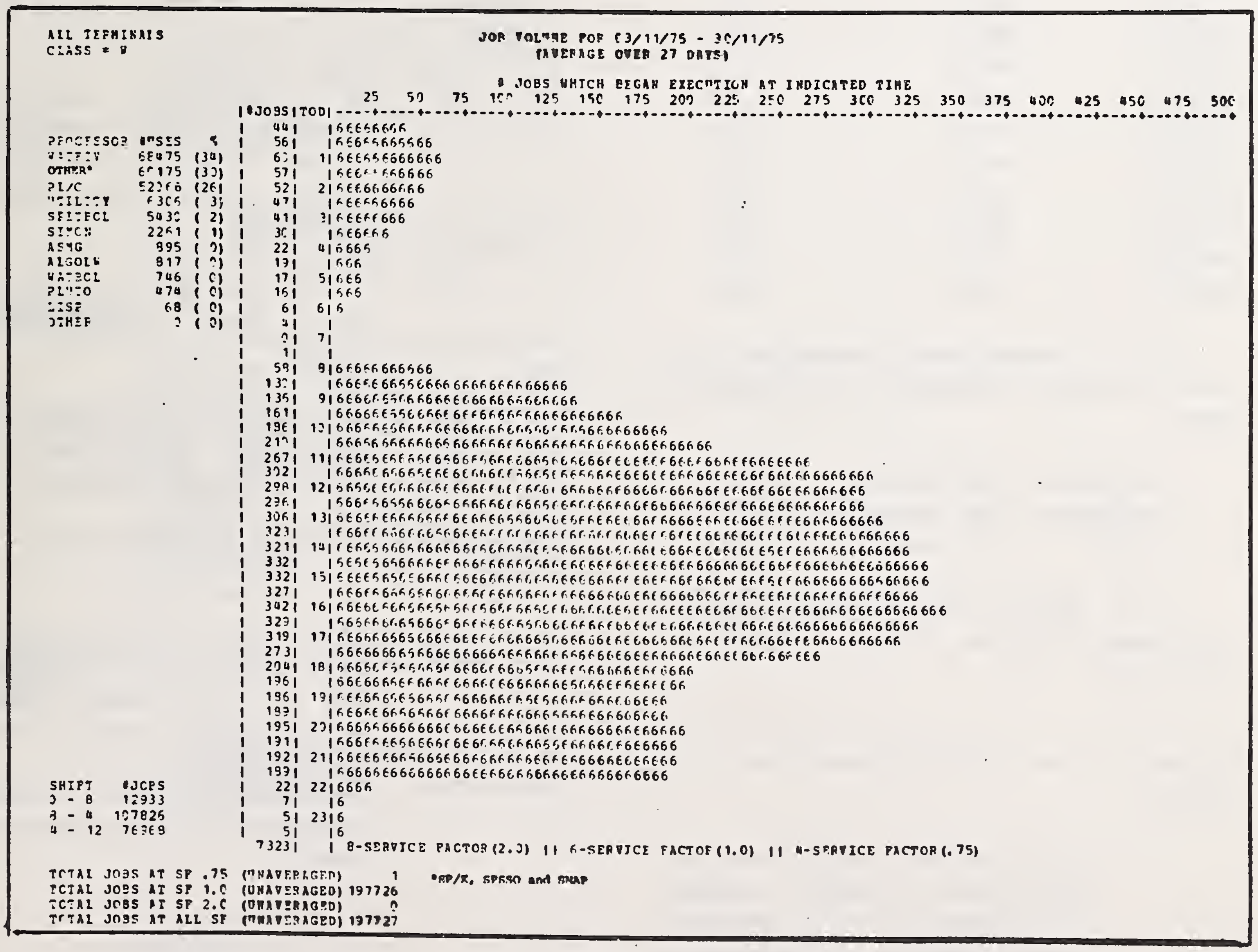
The following charts summarize the HSJS activity for the month of November. The graph represents the average number of jobs processed during each half hour period of the day.

Mark Tapia

RESOURCE USAGE BY PROCESSOR

PROCESSOR	#USES	%TOTAL	TOTAL PER PROCESSOR CPU (MIN)	#CARDS READ	#LINES PRINTED	AVERAGE PER USE CPU (MIN)	#CARDS READ	#LINES PRINTED
WATFIV	68475	(35)	918.43	8924781	11153764	0.012	128	160
OTHER*	60175	(30)	680.33	4562178	8895985	0.008	72	144
PL/C	52066	(26)	675.92	6556139	11700015	0.012	124	224
UTILITY	6306	(3)	17.51	715367	940645	0.000	112	148
SPITBOL	5430	(3)	60.20	977862	1532232	0.008	180	280
SIMON	2261	(1)	14.74	209400	287982	0.004	92	124
ASMG	895	(0)	14.04	203007	187929	0.016	224	208
ALGOLW	817	(0)	13.70	183397	232945	0.016	224	284
WATBOL	746	(0)	6.81	104518	130964	0.008	140	172
PLUTO	474	(0)	11.79	108443	130538	0.023	228	272
LISP	68	(0)	0.90	9794	21848	0.012	144	320
ASSIST	14	(0)	0.08	690	1282	0.004	48	88
TOTAL	197727		2414.44	22555576	35216129	0.012	114	178

*SP/K, SPSSQ and SNAP



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ALL TERMINALS                                          JOB VOLUME FOR 03/11/75 - 30/11/75
CLASS = W                                                    (AVERAGE OVER 27 DAYS)

                                                  # JOBS WHICH BEGAN EXECUTION AT INDICATED TIME
                                     25   50   75  100  125  150  175  200  225  250  275  300  325  350  375  400  425  450  475  500
                      |#JOBS|TOD|----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+
                      |   44|   |66666666
PROCESSOR #USES   %   |   56|   |66666666666
WATFIV    68475 (34)  |   63|  1|666666666666
OTHER*    60175 (30)  |   57|   |66666666666
PL/C      52066 (26)  |   52|  2|6666666666
UTILITY    6306 ( 3)  |   47|   |666666666
SPITBOL    5430 ( 2)  |   41|  3|66666666
SIMON      2261 ( 1)  |   30|   |666666
ASMG        895 ( 0)  |   22|  4|6666
ALGOLW      817 ( 0)  |   19|   |666
WATBOL      746 ( 0)  |   17|  5|666
PLUTO       474 ( 0)  |   16|   |666
LISP         68 ( 0)  |    6|  6|6
OTHER         0 ( 0)  |    4|   |
                      |    0|  7|
                      |    1|   |
                      |   59|  8|66666666666
                      |  132|   |66666666666666666666666666
                      |  135|  9|666666666666666666666666666
                      |  161|   |66666666666666666666666666666666
                      |  196| 10|66666666666666666666666666666666666666
                      |  210|   |6666666666666666666666666666666666666666666
                      |  267| 11|666666666666666666666666666666666666666666666666666666
                      |  302|   |66666666666666666666666666666666666666666666666666666666666666
                      |  298| 12|666666666666666666666666666666666666666666666666666666666666
                      |  296|   |666666666666666666666666666666666666666666666666666666666666
                      |  306| 13|666666666666666666666666666666666666666666666666666666666666666
                      |  323|   |666666666666666666666666666666666666666666666666666666666666666666
                      |  321| 14|666666666666666666666666666666666666666666666666666666666666666666
                      |  332|   |66666666666666666666666666666666666666666666666666666666666666666666
                      |  332| 15|66666666666666666666666666666666666666666666666666666666666666666666
                      |  327|   |6666666666666666666666666666666666666666666666666666666666666666666
                      |  342| 16|6666666666666666666666666666666666666666666666666666666666666666666666
                      |  329|   |6666666666666666666666666666666666666666666666666666666666666666666
                      |  319| 17|66666666666666666666666666666666666666666666666666666666666666666
                      |  273|   |6666666666666666666666666666666666666666666666666666666
                      |  204| 18|66666666666666666666666666666666666666666
                      |  196|   |6666666666666666666666666666666666666666
                      |  186| 19|66666666666666666666666666666666666666
                      |  193|   |66666666666666666666666666666666666666
                      |  195| 20|6666666666666666666666666666666666666666
                      |  191|   |666666666666666666666666666666666666666
                      |  192| 21|666666666666666666666666666666666666666
                      |  193|   |66666666666666666666666666666666666666
SHIFT    #JOBS        |   22| 22|6666
0 - 8    12933        |    7|   |6
8 - 4   107826        |    5| 23|6
4 - 12   76369        |    5|   |6
                        7323|   | 8-SERVICE FACTOR(2.0) || 6-SERVICE FACTOR(1.0) || 4-SERVICE FACTOR(.75)

TOTAL JOBS AT SF .75  (UNAVERAGED)      1     *SP/K, SPSSO and SNAP
TOTAL JOBS AT SF 1.0  (UNAVERAGED) 197726
TOTAL JOBS AT SF 2.0  (UNAVERAGED)      0
TOTAL JOBS AT ALL SF  (UNAVERAGED) 197727
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S/370-165-II RELIABILITY

The reliability statistics for November indicate an uptime percentage of 95.8 while the average number of IPL's per day reached 1.63. The number of scheduled hours of production for November totalled 479.

MONTHLY COMPARATIVE FIGURES

MONTH	% UPTIME	UNSCHED. IPLs/DAY
Sep/74	94.5	1.83
Oct/74	98.6	1.07
Nov/74	98.9	0.93
Dec/74	97.1	1.21
Jan/75	95.7	2.77
Feb/75	96.0	1.14
Mar/75	96.7	1.10
Apr/75	98.6	0.70
May/75	99.4	0.60
Jun/75	97.4	0.79
Jul/75	95.2	1.23
Aug/75	97.6	0.83
Sep/75	99.1	0.87
Oct/75	97.2	1.13
Nov/75	95.8	1.63

The percentage breakdown of total system downtime for November was:

Hardware: 956 minutes (79.8%)
Software: 195 minutes (16.3%)
Other : 47 minutes (3.9%)

The major events contributing to these downtime totals were as follows:

November 14 - 235 minutes down - 6 IPLs

a. 13 minutes attributed to "AOA" wait states caused by channel "0". IBM was investigating the problem.

b. 272 minutes charged to numerous system loops on channel 4. ITEL corrective maintenance found and replaced a defective card in the 7830 controller.

November 16 - 60 minutes down - 3 IPLs

a. All time and IPLs resulted from continuing problems with channel 0 which was causing the system to drop into an "AOA" wait condition. IBM was still attempting to find the source of the trouble.

November 18 - 37 minutes down - 2 IPLs

a. 15 minutes due to supervisor loops caused by a new version of SETUP which had just been installed.

b. 7 minutes were attributed to a HASP CATASTROPHIC error.

c. 15 minutes required for additional maintenance on the 7330 disk drives.

November 19 - 126 minutes down - 8 IPLs

a. All time due to numerous HASP CATASTROPHIC errors. Bad data had been created on the spool volume which necessitated an unscheduled cold format. A number of GPJS jobs were lost.

cont'd...

S/370 RELIABILITY Cont'd.

November 20 - 159 minutes down - 2 IPLs

a. All time charged to numerous system loops on channel 0, causing "AOA" waits. IBM maintenance still hadn't found the source of the problems.

November 23 - 26 minutes down - 4 IPLs

a. All time due to continuing problems with channel 0 loops dropping in "AOA" waits.

November 25 - 51 minutes down - 5 IPLs

a. 5 minutes attributed to an operator error when the wrong time of the day was overlooked.

b. 10 minutes charged to an IPL for HOSINIT abends, causing a system loop.

c. 36 minutes due to system loops on channel 0 . IBM found the source as being the 2703 controller and the defective card was replaced. A total of 294 minutes of downtime was attributed to this problem.

November 29 - 341 minutes down - 4 IPLs

a. 6 minutes attributed to a supervisor loop requiring an IPL.

b. 323 minutes charged to IBM corrective maintenance on the 2870 multiplexor channel. A defective card was replaced.

c. 12 minutes due to the system hanging on the STC tape drives. The operator reset the controller.

Paul Scarborough

```
                    DOWNTIME_REPORT_ON___S/370__FOR_NOV_75

-------------------------------------------------------------------------------------------------------------------------------
|                                                              REIPLS(FREQ) // DOWNTIME (MN)                                  |
|  DAY  REIPL    DNTIME 0    5   10   15   20   25   30   35   40   45   50   55   60   65   70   75   80   85   90   95  100|
=======================+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+|
| S  1      0        0 |                                                                                                     |
| S  2      0        0 |                                                                                                     |
| M  3      0        0 |                                                                                                     |
| T  4      0        0 |                                                                                                     |
| W  5      0        0 |                                                                                                     |
| T  6      1        7 |□******                                                                                              |
| F  7      2       12 |□□**********                                                                                         |
| S  8      0        0 |                                                                                                     |
| S  9      0        0 |                                                                                                     |
| M 10      0        0 |                                                                                                     |
| T 11      2       10 |□□********                                                                                           |
| W 12      1       10 |□*********                                                                                           |
| T 13      0        0 |                                                                                                     |
| F 14      6      285 |□□□□□□********************************************************************************************** 285 |
| S 15      2       14 |□□************                                                                                       |
| S 16      3       60 |□□□*********************************************************                                         |
| M 17      1       10 |□*********                                                                                           |
| T 18      2       37 |□□***********************************                                                                |
| W 19      8      126 |□□□□□□□□******************************************************************************************** 126 |
| T 20      2      159 |□□************************************************************************************************** 159 |
| F 21      1        6 |□*****                                                                                               |
| S 22      1        6 |□*****                                                                                               |
| S 23      4       26 |□□□□**********************                                                                           |
| M 24      0        0 |                                                                                                     |
| T 25      5       51 |□□□□□**********************************************                                                  |
| W 26      2       18 |□□****************                                                                                   |
| T 27      1       15 |□**************                                                                                      |
| F 28      0        0 |                                                                                                     |
| S 29      4      341 |□□□□************************************************************************************************ 341 |
| S 30      1        5 |□****                                                                                                |
-------------------------------------------------------------------------------------------------------------------------------


LEGEND       : ONE □  =ONE UNSCHED. IPL
               ONE *  =ONE MINUTE OF DOWNTIME

                                        STATISTICS


                                    TOTAL SCHEDULED HOURS OF PRODUCTION :  479
                                    TOTAL DOWNTIME (MN)   : 1198 , AVG/DAY :  39.93 , AVG/PROD HOUR :   1.25
                                    TOTAL UNSCHED. IPL'S :   49 , AVG/DAY   :   1.63
                                    DOWNTIME RATE IS      :  4.17 PERCENT OF SCHEDULED PRODUCTION HOURS
```

INTERACTIVE SYSTEMS RELIABILITY

The uptimes achieved for the month of November for each of APL and ATS were 99.85% and 99.91% of scheduled operation, respectively. The number of scheduled hours of operation during the month of November totalled 460, while the number of unscheduled IPL's per day was 0.03. In addition to the scheduled time, Interactive Services were also available for approximately 127 hours of unattended weekend operation.

The percentage breakdown of total S/360 downtime for November was: Hardware - 8 minutes (100%). One unscheduled IPL was required as a result of the failures.

The following table summarizes the time lost out of scheduled hours of production due to system failures for each of the systems.

Kam Jain

DATE	DOWNTIME (mins)		REASON
	APL	ATS	
Mon. Nov. 3	15	17	Month-end Acct. overlapped into production hours
Wed. Nov. 5	8	8	*Solid system on test I/O (Hardware)
Fri. Nov. 21	17	-	APL file dump overlapped into production hours
Total	40	25	*IPL Required

System Failures November 1 - 30, 1975

MONTHLY COMPARATIVE FIGURE

MONTH	% UPTIME APL/ATS		UNSCHED. IPL's/DAY
Nov. 74	97.50	97.23	0.50
Dec. 74	97.09	98.92	0.20
Jan. 74	98.45	98.90	0.29
Feb. 75	99.77	99.72	0.07
Mar. 75	99.69	98.42	0.10
Apr. 75	98.42	98.39	0.28
May 75	99.69	99.73	0.03
June 75	99.66	99.67	0.10
July 75	99.89	99.93	0.03
Aug. 75	99.68	99.47	0.07
Sep. 75	96.81	96.79	0.21
Oct. 75	99.43	98.00	0.17
Nov. 75	99.85	99.91	0.03

SHARP APL PUBLIC LIBRARY CATALOG SYSTEM

A system catalogue file containing detailed information on the SHARP APL public libraries is now available. The information is organized by application area. A total of 21 application areas are represented and an additional section (Section 0) is reserved for index and preface information.

To access the catalogue load the workspace 1 WSINDEX, i.e. type

```
)LOAD 1 WSINDEX.
```

Use the GET function to get the page numbers of each section. The function GET has syntax GET (SECTION NUMBER, PAGE NUMBER) and returns the entire page to your workspace eg. type GET (0,2) to get page 2 of Section 0. Note that pages in the catalogue use a decimal numbering system, e.g. page 2.14 is page 14 of Section 2. Pages 0.2 through 0.7 provide a listing of all the workspaces supported by the catalogue. The first page of each section contains an index for that section.

A reference copy of the SHARP APL Public Library catalogue is available at the Technical Reference Centre, Sandford Fleming, room 128.

Ernst Goetze

TRANSFER FACILITY (SHARP APL TO APLSV)

The APL workspace 4 WSTRANS provides a facility to transfer workspaces from SHARP APL on the S/360-65 to APLSV on the S/370-165-II.

The only prerequisites for the use of the workspace transfer facility are a SHARP APL file reservation sufficient to create a temporary transfer file containing the workspace contents (locked functions excepted), a valid S/370 Access Code and access to the shared variable facility of APLSV.

The transfer facility is documented in the SHARP APL Public Library Catalog described elsewhere in this issue of COMPUTERNEWS. Users with questions or problems concerning the workspace transfer facility should contact DATATALK at 928-6710.

Ernst Goetze

SHARP APL DATATALK PUBLIC LIBRARY CATALOG SYSTEM

DATATALK services has recently made available the new SHARP APL Public Library Catalog system.

The catalog classifies the entire system of APL public libraries into 21 application areas.

The catalog may be accessed by loading the APL workspace, 1 WSINDEX. All the abstract, describe and function how variables for all the workspaces adhering to any application area of the catalog may be conveniently accessed from your terminal under program control.

For more details, load 1 WSINDEX (i.e.)LOAD 1 WSINDEX) and display the variable CATALOGHOW and/or refer to the article SHARP APL PUBLIC LIBRARY CATALOG SYSTEM in this issue of COMPUTERNEWS.

DATATALK DIALOGS: END OF YEAR OFFERINGS

With nearly two years of experience behind us, DATATALK concludes that the single most popular calculation at the University of Toronto is .... linear least squares fitting!

Linear least squares fitting is more popular than the time of day, more popular than compound interest, linear equations and numerical integration put together. Function tabulation and interpolation is a close second, but number one at the University of Toronto is linear least squares fitting....so....

DATATALK: Good morning; DATATALK services....
C: Hi. What's the best line K=A+BxL if I give you the K and L values?
C: So K=272.0 231.0 177.0 139.0 86.0 and 73.0 for L equal to 67 57 47 23.5 and 17.0
D: Then, the constant is A=-1.79 and B=4.04
C: AHA, Great ...and what is K when L=63 and 42...?

....

cont'd...

DIALOGUES Cont'd.

DATATALK: Good morning, DATATALK services...

C: Hello, good morning, let me tell you my problem and maybe you'll be able to help me with it?

C: I've got ten measurements of OD,A and B and I know that there are constants, say Q and P, such that OD=PxA+QxB...how should I choose P and Q?

D: AHA...Well...I could estimate them using a least squares method...

……

DATATALK: Good morning, DATATALK services....

C: Hello. Now, I have only four X-values, but for each of these values, I made seven determinations of Y and I'm looking for a curve of the type LOG(Y)=MxX. What do you think?

D: Oh...we can do that...there are at least two ways that I can think of off hand...
I could take the mean of the Y-values as the best estimate of Y in each case, or I could replicate the X-values...

C: Great. I was thinking the same thing...let's do it...

Are these familiar problems? If problems like these have been troubling you, then do not hesitate to call DATATALK for solutions to these and a host of other computational and analytic services. We're available 10 a.m. - 10 p.m. Monday through Friday.

Ernst Goetze

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NOTE:

SF = Sandford Fleming
SG = 49 St. George
NP = McLennan Physical (New Physics)
SS = Sydney Smith

JOB AND SYSTEM STATUS QUERIES

SYSTEM/370, TSO	7373
ATS/APL	6234
7094	7094
2741 TERMINAL MALFUNCTIONS	7107
029 KEYPUNCH MALFUNCTIONS	6465

SERVICES

	DIAL-UP	ADVICE
APL - 2741	7200	6710
APL(ASCII)	7200	7107
APL SV - 2741	7239	6710
APL SV - TTY	7447	6710
ATS	7100	7107
TSO - 2741	7303	8599
TSO - TTY (10 cps)	7390	8599
TSO - TTY (30 cps)	7386	8599
DATATALK	6710	6710

UTCC COMPUTER EQUIPMENT

SYSTEM/370 MODEL 165-II

- located in SF103/105/112
- provides General Purpose Job Stream, High Speed Job Stream, APL, SV and TSO services
- 3072K bytes of memory
- 1 drum (2301)
- 13 disk drives (3330)
- 8 disk drives (2314)
- 7 magnetic tape drives (5 9-track and 2 7-track)
- 6 display consoles
- 6 printers
- 5 card readers
- 1 card punch
- 8 remote batch terminals
- 1 paper tape reader
- Calcomp plotters (11" and 30")
- Gould plotter (11")
- OS/MVT with HASP

SYSTEM/360 MODEL 65

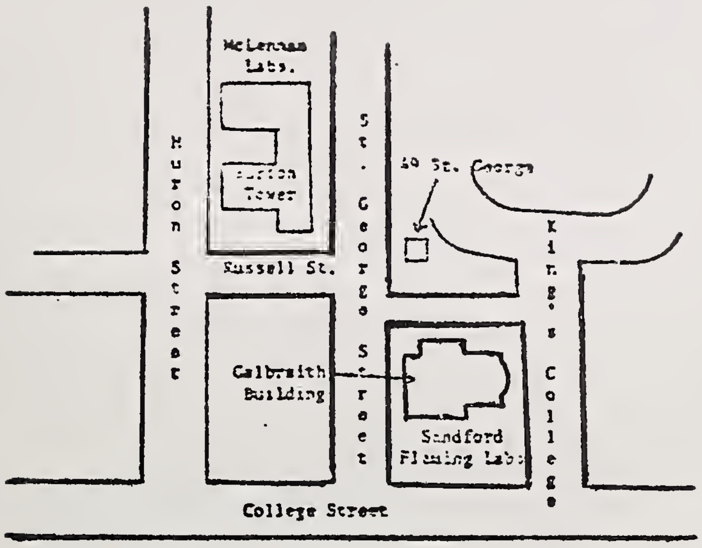
- located in McLennan Physical Laboratories
- provides APL and ATS services
- 1536K bytes of core
- 24 disk drives (2314)
- 3 9-track magnetic tape drives
- 1 printer
- 1 card reader
- 1 card punch
- 140 typewriter terminals
- OS/MVT with APL and ATS

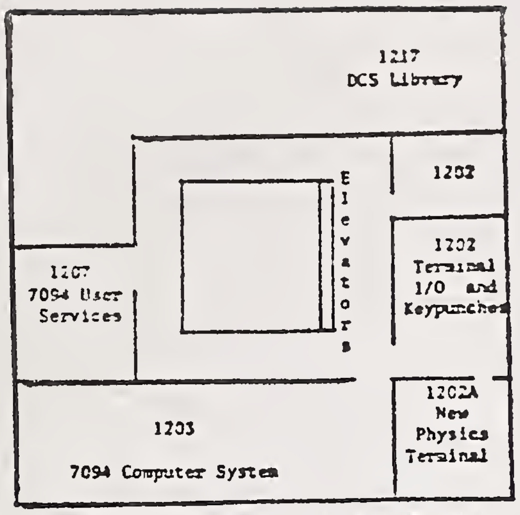
7094 II

- located in Room 1203 Burton Tower
- 32K words of core
- 1 disk
- 8 magnetic tape drives
- input/output via a 1401 computer

COMPUTER RESEARCH FACILITY

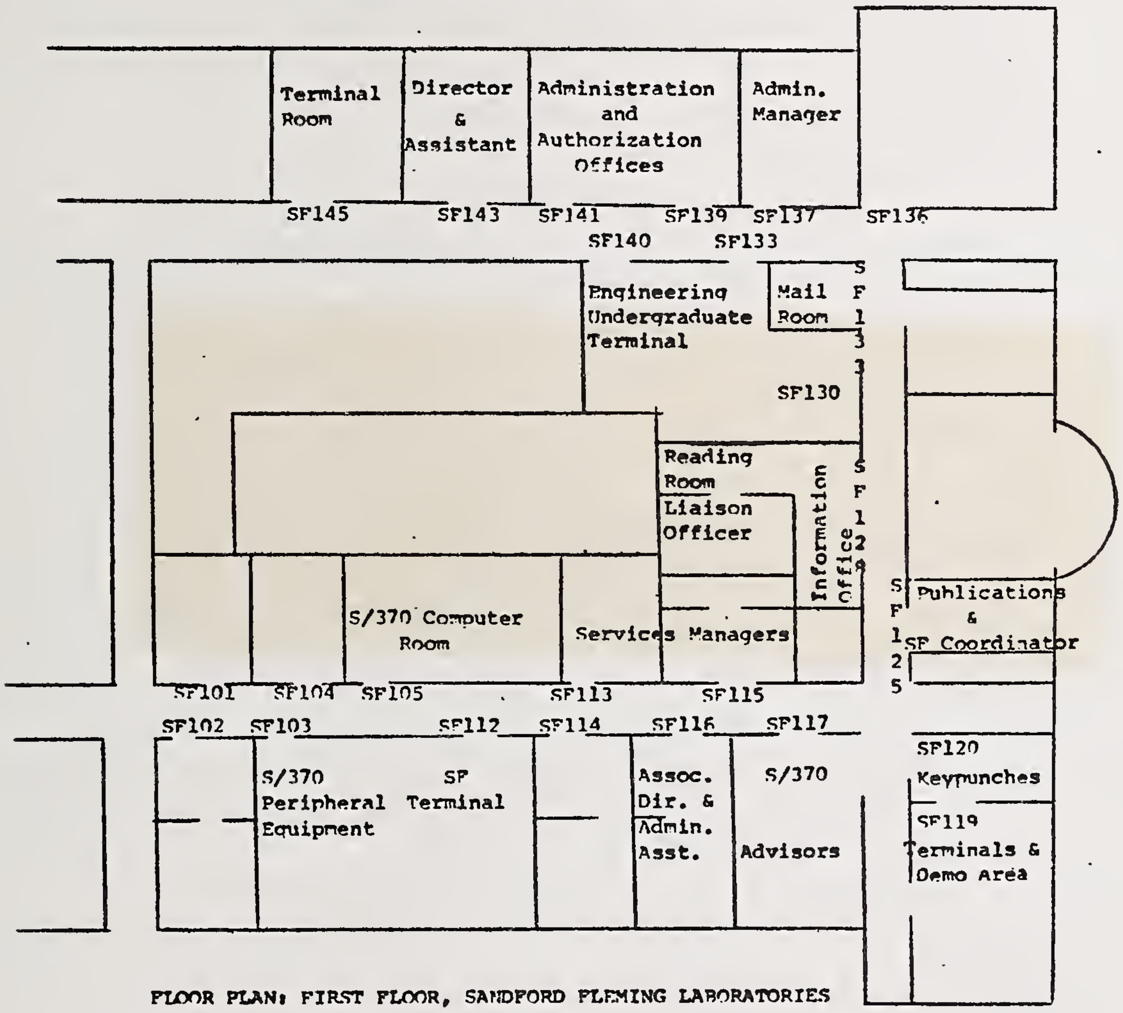
- located in SF207
- DEC GT44 Systems with
  - 1 PDP-11/40 CPU
  - 2 9-track dual density tape drives
  - 1 1000 cpm card reader
  - VT17 graphics display unit
  - 1 lab. peripheral system with A/D & D/A
  - 1 CVI 260 Video Bandwidth Compressor
- DEC GT40 System with
  - 1 PDP-11/10 CPU
  - 1 2314 tape disk drive
  - 1 VT12 graphic display unit
  - 9-track/800 BPI tape drive
  - 1 Calcomp microfilm plotter



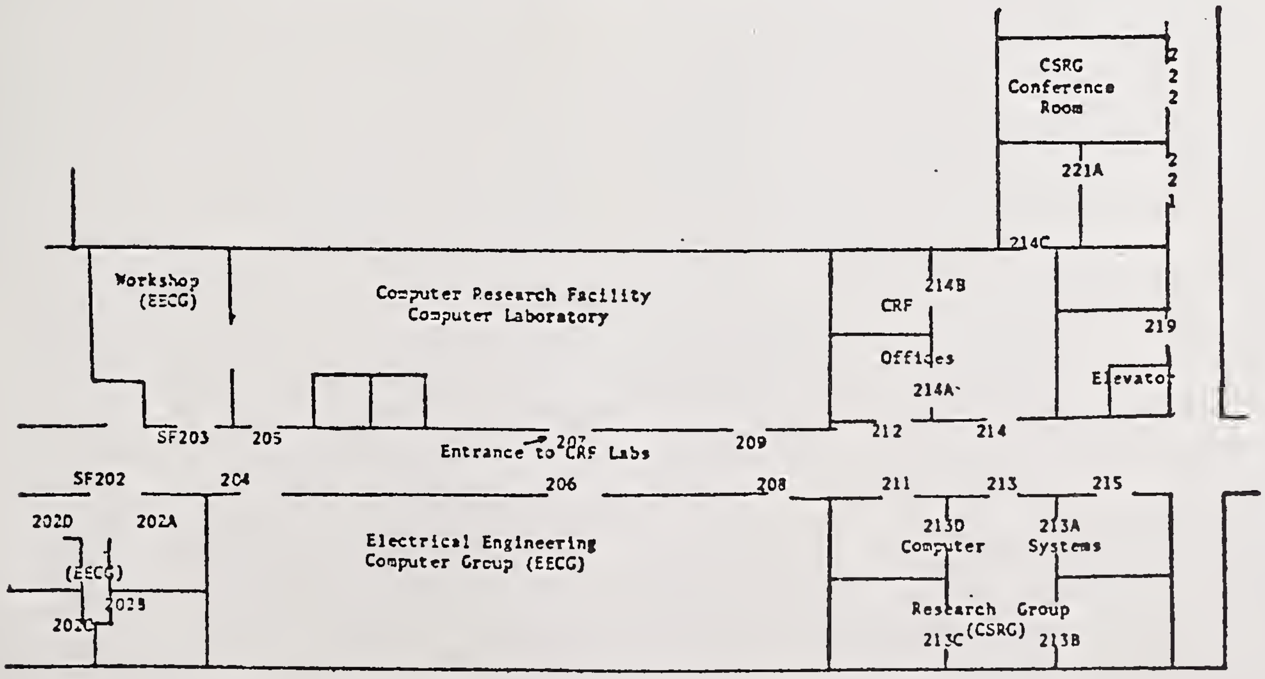


FLOOR PLAN: TWELFTH FLOOR, BURTON TOWER

UNIVERSITY OF TORONTO COMPUTER CENTRE



FLOOR PLAN: FIRST FLOOR, SANDFORD FLEMING LABORATORIES



FLOOR PLAN: SECOND FLOOR, SANDFORD FLEMING LABORATORIES

UNIVERSITY OF TORONTO
COMPUTER CENTRE,
TORONTO, CANADA,

CAMPUS DELIVERY

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